

**RULES
OF THE
MISSISSIPPI DEPARTMENT OF AGRICULTURE AND COMMERCE**

P.O. Box 1609
Jackson, MS 39215-1609
601-359-1100
www.mdac.state.ms.us

SUBPART 3 – BUREAU OF PLANT INDUSTRY
CHAPTER 10 – Crop Spraying and Licensing of Aerial Applicators
SUBCHAPTER 02 – Regulation of Application by Aircraft of Agricultural Substances

HORMONE-TYPE HERBICIDE APPLICATIONS

Specifications and Inspection of Spray Equipment on Aircraft for Hormone Type
Herbicides

- 218.01 ~~Conventional Spray Equipment: The spray equipment on an aircraft must have a positive cockpit-operated cutoff control at the tank and the same or its equivalent (diaphragm check) at each nozzle and be equipped with functional bleed back systems where booms extend past the last operating nozzle, and must be kept in good operating condition. Nozzles should be cylindrical jet producing types with not less than 1/8 inch (0.125 inch) diameter, simple orifice or tube with no mechanism which would cause a sheet, cone, fan or other dispersion pattern which would break up the spray into droplets smaller than those comparable to the size droplets produced by a simple jet producing type nozzle. The number of nozzles shall be sufficient to deliver not less than five gallons of water solutions per acre for applications made from April 1 to September 30, or three gallons per acre for applications made from October 1 to March 31. When more than five gallons per acre are to be applied, this may be done by increasing the number of nozzles or the diameter of the orifice openings. So as to reduce the amount of spray drawn into the wing tip vortices, the distance between the outermost nozzles shall not exceed 70% of the fixed wing span or rotor diameter. Nozzle discharge shall be directed with the slipstream or at a maximum of 10 degrees downward from the horizontal.~~
- 218.01 The spray equipment on an aircraft must have a positive cockpit-operated cutoff control at the tank and the same or equivalent (diaphragm check) at each nozzle and be equipped with functional bleed back systems where booms extend past the last operating nozzle, and must be kept in good operating condition. “Nozzles must be a type and configuration that will deliver a droplet with a volume median diameter of 300 microns or larger”. The number of nozzles shall be sufficient to deliver not less than five gallons of water solutions per acre for applications made from April 1 to September 30, or three gallons per acre for applications made

from October 1 to March 31. When more than five gallons per acre are to be applied, this may be done by increasing the number of nozzles or the diameter of the orifice openings. So as to reduce the amount of spray drawn into the wing tip vortices, the distance between the outermost nozzles shall not exceed 70% of the fixed wing span or rotor diameter.

218.02 Special Drift Control Spray Systems and Equipment: Any equipment designed for special purposes and drift control, (such as the Microfoil boom, Warnell System, Thru-Valve Boom, or similar equivalent equipment) must be approved before a license is issued. Field operation of the equipment for observation may be required before approval. If it is determined that the equipment is not operating in a safe manner, a license will not be issued.

1. Boom length shall not exceed 70% of the rotor diameter.
2. Inspection and Testing of Equipment: The spraying or application equipment on all aircraft used in applying hormone-type herbicides may be inspected by an employee of the department to see if such equipment will meet with requirements, and may be pattern tested and achieve a coefficient of variation of not greater than 20% across the pattern before approval, and may be spot checked in the field.

218.03 Other special drift control equipment and/or new technology equivalent to the above listed equipment may be approved upon submission of supporting equivalency data by the manufacturer, except for use on rice.

MATERIALS AND METHODS FOR APPLICATION FOR HORMONE-TYPE HERBICIDES

219.01 2,4-D, Dicamba, and/or MCPA shall not be applied in any form to any crop or site by fixed wing aircraft between the dates of April 1 and September 30; and

219.02 2,4-D and/or MCPA shall not be applied in any form to rice by helicopter between the dates of April 1 and September 30, except as follows:

1. Helicopter must be equipped with precision type spray system. (Microfoil type)
2. Equipment Specifications and Application Techniques
 - a. Boom: No longer than rotor diameter
 - b. Nozzles:
 - i. .028" Airfoil or larger, or
 - ii. .028 Accu Flow, or larger, 32 tube
 - c. Volume: 5 gal. minimum total spray volume per acre
 - d. Flight Speed: 30 mph maximum in critical areas, and 60 mph maximum in field away from critical areas
 - e. System Pressure: Maximum of 30 PSI with very low pressure at tubes
 - f. Wind Speed: Not to exceed 5 mph at time of application

- g. Wind Speed and Direction Indicators: Must be used during application
 - h. Buffer Zone: Application is prohibited within one-half ($\frac{1}{2}$) mile of commercial plantings of cotton or other highly susceptible crops such as grapes, tomatoes, etc., unless the applicator, or person for whom the application is made, furnishes the Bureau of Plant Industry written permission from the owner of those highly susceptible crops at least 24 hours prior to the time the application is made.
3. Insurance: Property damage liability insurance for applications under this section of these regulations must be in the amount of \$200,000.00 for each occurrence.
 4. Observer: An observer employed by the applicator and/or the rice producer for whom the application is made, must be present at all times to monitor the application and record temperature, wind speed and direction, and other pertinent information. Temperature, wind speed and direction must be measured and recorded immediately prior to application, and monitored consistently during the application with recordings made when changes occur or every 1/4 hour (15 minutes). The time of day shall be recorded for the period of time such data is collected.
Example of Data to be recorded:
 - a. Date, 6/20/90
 - b. Time, 10:00 a.m.
 - c. Wind Direction, NE or 45°
 - d. Wind Speed, 2 mph
 - e. Temperature, 86° F.
 5. Inspector/Observer: An Inspector/Observer from the Bureau of Plant Industry, may be assigned to each applicator. The Inspector/Observer will monitor and record wind speed and direction, temperature, herbicide use and symptoms of herbicide injury in the vicinity of the treated area, and labeling for the herbicide being applied.
 6. Pilot Training: Each pilot making applications must complete an approved training course in proper application.
 7. Equipment Inspections: Equipment may be inspected by the Bureau of Plant Industry. Inspections of equipment may be made at any time during and after the time it is used.
 8. Tank Mixes: Tank mixes with other pesticides and/or fertilizers are prohibited.
 9. Ester Formulations: Applications of ester formulations are prohibited.

219.03 2,4-D, Dicamba, and/or MCPA applied to other crops or sites between April 1 and September 30 by helicopter shall not be applied within one-half ($\frac{1}{2}$) mile of commercial plantings of cotton, or other highly susceptible crops such as tomatoes, snap beans, grapes (and soybeans in the case of Dicamba). Helicopters must be equipped with special spray systems and equipment designed for drift control (such as Microfoil boom, Warnell System, Thru-Valve boom, or similar

equivalent equipment) and be approved by the Bureau of Plant Industry following inspection and testing as indicated in subsection 219.02 above.

- 219.04 Low Volatile Ester formulations of 2,4-D and MCPA shall not be applied from April 1 thru September 30; and
- 219.05 Drift control agents shall be used in accordance with labeling with all hormone-type herbicides applied between the dates of April 1 and September 30 unless spray system precludes such use.
- 219.06 Smoke and/or other suitable means shall be used to detect inversion conditions and determine wind direction and speed.
- 219.07 Applicators shall not use less volume of spray per acre than provided for on the labeling of the herbicide being used and in no case shall the volume of total spray per acre be less than five gallons between April 1 and September 30, or three gallons between October 1 and March 31.
- 219.08 Applications of hormone-type herbicides shall not be made when a temperature air inversion exists or when air temperatures within the application zone are 90° F., or above.
- 219.09 The application of high volatile ester formulations is prohibited at any time.
- 219.10 Transportation of hormone-type herbicides by aircraft other than while treating crops involved is prohibited.
- 219.11 No hormone-type herbicide shall be discharged at a height greater than 10 feet with fixed wing aircraft and/or 30 feet for helicopters above the tops of the plants being treated except in power line right-of-way work, nor over any crops, or properties other than the crop being treated.
- 219.12 No hormone-type herbicides applications shall be made in winds of excess of 5 mph.